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P.O. Box 984, WEST KINGSTON, RI 02892-0984

PHONE: 401 783-4011 • FAX: 401 783-7644

E-MAIL: grc@grcmail.grc.uri.edu

WORLD WIDE WEB: <http://www.grc.uri.edu>

2000 GORDON RESEARCH CONFERENCE

on Nanostructure Fabrication

FINAL PROGRESS REPORT

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The Gordon Research Conference (GRC) on Nanostructure Fabrication was held at Tilton School, Tilton, New Hampshire, July 23-28, 2000. The conference was well attended with 124 participants (list enclosed). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both US and foreign scientists, senior researchers, young investigators, and students.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field (program enclosed).

I want to personally thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Christie Marrian
Conference Chair

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Nanostructure Fabrication

July 23-28, 2000
Tilton School
Tilton, New Hampshire

Dr. Eric Marrian DARPA/MIL NORTH FAIRFAX DRIVE FARMINGTON, VA 22203 EMAIL: EMARRIAN@DARPA.MIL	Dieter Kern UNIVERSITAET TUEBINGEN INSTITUT FUER ANGEWANDTE PHYSIK AUF DER MORGEN STEELE 10 TUEBINGEN, D-72076 GERMANY Email: DIETER.KERN@UNI-TUEBINGEN.DE
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Visit the [Conference Home Page](#) for more information.

Topics and Speakers

Nano/Biotechnology

Discussion Leader: Terry Michalske, Sandia National Laboratories

Andy Ellington, University of Texas: *Aptazymes as Molecular Switches for Nanoscale Devices*

Rich Colton, Naval Research Laboratory: *Novel Biosensors based on Force Discrimination between Molecules*

Microcontact Printing

Discussion Leader: Fabian Pease, Stanford University

Clivia Sotomayor Torres, University of Wuppertal: *Nanoimprint Lithography, Polymer Aspects and Optoelectronic Applications*

Grant Willson, University of Texas: *Step and Flash Imprint Lithography: A low Cost Alternative for Nanostructure Fabrication*

Steve Chou, Princeton University: *Advances of Nanoimprint Lithography and Applications*

Nanoelectronics

Discussion Leader: Don Tennant, Bell Laboratories, Lucent Technologies

Rafael Kleiman, Lucent Technologies: *Exploring the Limits of CMOS Technology with Scanned-Probe Microscopy*

Shen Tsai, NEC Fundamental Research Laboratories: *Quantum Computing in Nanostructures*

Limits in Lithography

Discussion Leader: Scott Mackay, SEMATECH Frances Houle, IBM Almaden Research Center: *Chemistry and Physics Controlling Nanoscale Pattern Formation in Polymeric Resists*

Alex Liddle, Bell Laboratories, Lucent Technologies: *Fundamental Physics in High-Throughput Projection E-Beam Lithography*
Greg Cardinale, Sandia National Laboratories: *Printing at EUV Wavelengths*

Molecular Electronics

Discussion Leader: Paul Campbell, Naval Research Laboratory Phaedon Avouris, IBM T.J. Watson Research Center: *Carbon Nanotube and Silicon Nanoelectronics*
Mark Reed, Yale University: *Is the Future in Plastics?*

NanoMechanical Systems

Discussion Leader: Dustin Carr, Bell Laboratories, Lucent Technologies
Lidija Sekaric, Cornell University: *Nanomechanical Resonant Structures in Silicon-based Materials*
Mike Roukes, CalTech: *Nanomechanical Systems: Fabrication, Applications, & Ultimate Limits*
Peter Vettiger, IBM Zurich: *Millipede - A Highly Parallel AFM-based Data Storage System*

Low Dimensional Structure

Discussion Leader: Harold Craighead, Cornell University
Horst Stormer, Columbia University: *Things on the Edge*
Don Eigler, IBM Almaden Research Center: *Things in the Middle*

Magnetic Media and Nanostructures

Discussion Leader: Dawn Bonnell, University of Pennsylvania Caroline Ross, Massachusetts Institute of Technology: *Magnetic Behavior of Lithographically Patterned Magnetic Arrays*
Bruce Terris, IBM Almaden Research Center: *Patterned Magnetic Media for High Density Storage*
Angela Belcher, University of Texas: *Biologically Mediated Directed Nanocrystal Assembly*

Plenary Session

Discussion Leader: Dieter Kern, University of Tuebingen

Theresa Mayer, Pennsylvania State University: *Field Induced Alignment of Nanowires*
Ralph Joerger, University of Uppsala: *Silver Accumulating Bacteria*



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Conference Registration List

NANOSTRUCTURE FABRICATION

Tilton School: 7/23/2000 thru 7/28/2000

DAVID ABUSCH-MAGDER

BELL LABORATORIES, LUCENT TECHNOLOGIES
ROOM 2D-316
600 MOUNTAIN AVENUE
MURRAY HILL, NJ 07974

Phone: 908-582-3157
Fax: 908-582-6000
Email: DAVIDAM@BELL-LABS.COM

Participation: Poster Presenter

GORETTY ALONSO-AMIGO

JENOPTIK MIKROTECHNIK GMBH
3447 INVESTMENT BOULEVARD
SUITE 3
HAYWARD, CA 94545

Phone: 510-782-7966
Fax: 510-782-7961
Email: JOUSA@PACBELL.NET

Participation: Poster Presenter

PHAEDON AVOURIS

IBM RESEARCH DIVISION
T J WATSON RESEARCH CENTER, 453
P.O. BOX 218
YORKTOWN HEIGHTS, NY 10598

Phone: 914-945-2722
Fax: 914-945-2141
Email: AVOURIS@WATSON.IBM.COM

Participation: Speaker

GAUTAM BANERJEE

ECHEM INNOVATIONS, INC.
850 SOUTH LONGMORE
SUITE 228
MESA, AZ 85202

Phone: 480-649-8347
Fax: 480-835-6691
Email: ECHEM_INNOVATION@HOTMAIL.COM

Participation: Poster Presenter

ANGELA M BELCHER

UNIVERSITY OF TEXAS AT AUSTIN
DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY
THE TEXAS MATERIALS INSTITUTE
AUSTIN, TX 78712

Phone: 512-471-1154
Fax: 512-471-1400
Email: BELCHER@MAIL.UTEXAS.EDU

Participation: Speaker

GEORGES BELFORT

RENSSELAER POLYTECHNIC INSTITUTE
HOWARD P ISERMANN, DEPT OF CHEM ENG
RICKETTS BLDG 210A
TROY, NY 12180-3590

Phone: 518-276-6948
Fax: 518-276-4030
Email: belfog@rpi.edu

Participation: Attendee

GRACIELA B BLANCHET

DUPONT, CENTRAL RESEARCH
EXPERIMENTAL STATION, E356/284
WILMINGTON, DE 19880

Phone: 302-695-8687
Fax: 302-695-8120
Email: GRACIELA.B.BLANCHET@USA.DUPONT.COM
Participation: Attendee

DAWN A BONNELL

UNIVERSITY OF PENNSYLVANIA
DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING
3231 WALNUT STREET
PHILADELPHIA, PA 19104

Phone: 215-898-6231
Fax: 215-573-2128
Email: BONNELL@LRSM.UPENN.EDU

Participation: Attendee

DAVID R BOWLER

UNIVERSITY COLLEGE LONDON
DEPARTMENT OF PHYSICS & ASTRONOMY
GOWER STREET
LONDON, WC1E 6BT UNITED KINGDOM

Phone: 44-020-7679350
Fax: 44-020-7679136
Email: DAVID.BOWLER@UCL.AC.UK

Participation: Poster Presenter

JURGEN BRUGGER
UNIVERSITY OF TWENTE
MESA RESEARCH INSTITUTE
PO BOX 217
ENSCHDEDE, 7500 AE NETHERLANDS

Phone:
Fax:
Email: J.P.BRUGGER@EL.UTWENTE.NL
Participation: Poster Presenter

COLIN A BULTHAUP
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
MEDIA LAB, NANOMEDIA
E15-422
20 AMES STREET
CAMBRIDGE, MA 02116

Phone: 617-253-0988
Fax: 617-258-6264
Email: MOBIUS@MIT.EDU
Participation: Poster Presenter

NANCY A BURNHAM
WORCESTER POLYTECHNIC INSTITUTE
PHYSICS DEPARTMENT
100 INSTITUTE ROAD
WORCESTER, MA 01609-2280

Phone:
Fax:
Email: NAB@WPI.EDU
Participation: Attendee

MARIO CABODI
CORNELL UNIVERSITY
DEPARTMENT OF APPLIED PHYSICS
G7 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-6286
Fax:
Email: MC131@CORNELL.EDU
Participation: Attendee

PAUL M CAMPBELL
NAVAL RESEARCH LABORATORY
CODE 6863
4555 OVERLOOK AVENUE SW
WASHINGTON, DC 20375

Phone: 202-767-3414
Fax: 202-767-4290
Email: CAMPBELL@BLOCH.NRL.NAVY.MIL
Participation: Poster Presenter

GREGORY F CARDINALE
SANDIA NATIONAL LABORATORIES
7011 EAST AVENUE
MS 9409
LIVERMORE, CA 94550

Phone: 925-294-1506
Fax: 925-294-3870
Email: GFCARDI@SANDIA.GOV
Participation: Speaker

DUSTIN W CARR
LUCENT TECHNOLOGIES
BELL LABORATORIES
700 MOUNTAIN AVENUE 1D-230
MURRAY HILL, NJ 07974

Phone: 908-582-3105
Fax: 908-582-3260
Email:
Participation: Speaker

OLIVIA M CASTELLINI
UNIVERSITY OF WISCONSIN - MADISON
1150 UNIVERSITY AVENUE
MADISON, WI 53706

Phone: 608-263-4476
Fax: 608-265-2334
Email: OMCASTELLINI@STUDENTS.WISC.EDU
Participation: Attendee

MICHAEL L CHABINYC
HARVARD UNIVERSITY
12 OXFORD STREET BOX 15
CAMBRIDGE, MA 02138

Phone: 617-495-9436
Fax: 617-495-2500
Email: CHABINYC@FAS.HARVARD.EDU
Participation: Attendee

REBECCA M CHEUNG
UNIVERSITY OF EDINBURGH
DEPT OF EEE
KING'S BUILDINGS
EDINBURGH, SCOTLAND UNITED KINGDOM

Phone: 44-131-650-5749
Fax: 44-131-650-6554
Email: r.cheung@ee.ed.ac.uk
Participation: Poster Presenter

STEPHEN Y CHOU
PRINCETON UNIVERSITY
DEPT. OF ELECTRICAL ENGINEERING
PRINCETON, NJ 08544

Phone: 609-258-4416
Fax: 609-258-6279
Email: CHOU@ECE.UMN.EDU

Participation: Speaker

PETER CHRISTOPHLIEMK
HENKAL KGAA
RESEARCH SOLIDS/ADVANCED MATERIALS
DUESSELDORF, D 40191 GERMANY

Phone: 49-211-797-7294
Fax: 49-211-798-2235
Email: PETER.CHRISTOPHLIEMK@HENKEL.DE

Participation: Attendee

JOHN CLEMMENS
UNIVERSITY OF WASHINGTON
BOX 352125
SEATTLE, WA 98195

Phone: 206-685-4432
Fax: 206-685-4434
Email: JCLEMMEN@U.WASHINGTON.EDU

Participation: Poster Presenter

SIDNEY R COHEN
WEIZMANN INSTITUTE OF SCIENCE
PERLMAN BLDG., POB 26
REHOVOT, 76100 ISRAEL

Phone: 972-8-934-2703
Fax: 972-8-934-4137
Email: SIDNEY.COHEN@WEIZMANN.AC.IL

Participation: Poster Presenter

ROBERT W COHN
UNIVERSITY OF LOUISVILLE
THE ELECTROOPTICS RESEARCH INSTITUTE
LUTZ HALL, ROOM 442
BROOK AND WARNOCK
LOUISVILLE, KY 40292

Phone: 502-852-7077
Fax: 502-852-1577
Email: RWCOHN@LOUISVILLE.EDU

Participation: Poster Presenter

RICHARD J COLTON
NAVAL RESEARCH LABORATORY
CODE 6170
4555 OVERLOOK AVENUE SE
WASHINGTON, DC 20375-5342

Phone: 202-767-0801
Fax: 202-767-3321
Email: RCOLTON@STM2.NRL.NAVY.MIL

Participation: Speaker

EMILY COOPER
MIT MEDIA LABORATORY
20 AMES STREET, E15-320F
CAMBRIDGE, MA 02139-4307

Phone:
Fax:
Email: EBCOOPER@MIT.EDU

Participation: Poster Presenter

HAROLD CRAIGHEAD
CORNELL UNIVERSITY
APPLIED & ENGINEERING PHYSICS DEPT
211 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-8707
Fax: 607-255-7658
Email: HGC1@CORNELL.EDU

Participation: Speaker

FRANK DIRNE
PHILIPS RESEARCH LABORATORIES
PROF. HOLSTLAAN 4
ELNDHOVEN, 5656 AA THE NETHERLANDS

Phone: 31-40-27-42627
Fax: 31-40-27-44769
Email: FRANK.DIRNE@PHILIPS.COM

Participation: Poster Presenter

JAROSLAW DRELICH
MICHIGAN TECHNOLOGICAL UNIVERSITY
DEPARTMENT OF METALL. MATERIALS ENG.
1400 TOWNSEND DRIVE
HOUGHTON, MI 49931

Phone: 906-487-2932
Fax: 906-487-2934
Email: JWDRELIC@MTU.EDU

Participation: Attendee

JOCHEN DRESSEN
VDI- TECHNOLOGY CENTER
PO BOX 10 11 39
SUESSELDORF, 40239 GERMANY

Phone: 49-2116214580
Fax: 49-2116214484
Email: DRESSEN@VDI.DE
Participation: Attendee

WALTER J DRESSICK
NAVAL RESEARCH LAB
CODE 6950
4555 OVERLOOK AVENUE, SW
WASHINGTON, DC 20375

Phone: 202-404-6059
Fax: 202-767-9594
Email: WJD@CBMSE.NRL.NAVY.MIL
Participation: Attendee

RAYMOND F EGERTON
PORTLAND STATE UNIVERSITY
PHYSICS DEPARTMENT
PORTLAND, OR 97207-0751

Phone: 503-725-4227
Fax: 503-725-3888
Email: EGERTONR@PDX.EDU
Participation: Poster Presenter

DONALD M EIGLER
IBM ALMADEN RESEARCH CENTER
650 HARRY ROAD
SAN JOSE, CA 95120

Phone: 408-927-2172
Fax: 408-927-2510
Email: EIGLER@ALMADEN.IBM.COM
Participation: Speaker

ANDREW D ELLINGTON
UNIVERSITY OF TEXAS AT AUSTIN
DEPARTMENT OF CHEMISTRY
ICMB A-4800
26TH AND SPEEDWAY
AUSTIN, TX 78712

Phone: 512-232-3424
Fax: 512-471-7014
Email: ANDY.ELLINGTON@MAIL.UTEXAS.EDU
Participation: Speaker

GEORG S FRITZ
UNIVERSITY OF TUEBINGEN
INSTITUTE OF APPLIED PHYSICS
AUF DER MORGENSTELLE 10
TUEBINGEN, D-72076 GERMANY

Phone: 49-7071-2976339
Fax: 49-7071-295400
Email: GEORG-STEFAN.FRITZ@UNI-TUEBINGEN.DE
Participation: Poster Presenter

MIKE FRITZE
MIT LINCOLN LABS
ROOM L-212
244 WOOD STREET
LEXINGTON, MA 02420-9108

Phone: 781-981-2626
Fax: 781-981-7889
Email: MFRTZE@LL.MIT.EDU
Participation: Poster Presenter

SAWYER FULLER
MIT MEDIA LAB
20 AMES STREET
ROOM E15-015
CAMBRIDGE, MA 02139

Phone: 617 253 0988
Fax:
Email:
Participation: Attendee

GREGG M GALLATIN
LUCENT, BELL LABS
ROOM 1D402
600 MOUNTAIN AVENUE
MURRAY HILL, NJ 07974-0636

Phone: 908-582-4125
Fax: 908-582-2300
Email: GALLATIN@LUCENT.COM
Participation: Poster Presenter

STEVEN M GEORGE
UNIVERSITY OF COLORADO
DEPARTMENT OF CHEMISTRY
CAMPUS BOX 215
BOULDER, CO 80309

Phone: 303-492-3398
Fax: 303-492-5894
Email: GEORGES@SPOT.COLORADO.EDU
Participation: Poster Presenter

WOLFGANG GEYER
UNIVERSITAET HEIDELBERG
ANGEW PHYS CHEMIE
IM NEUENHEIMER FELD 253
HEIDELBERG, 69120 GERMANY

Phone: 49-6221-54-493
Fax: 49-6221-54-619
Email: WOLFGANG.GEYER@URZ.UNI-
HEIDELBERG.DE
Participation: Poster Presenter

SAUL T GRIFFITH
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
MEDIA LOB.
20 AMES STREET
CAMBRIDGE, MA 02139

Phone: 617-253-5554
Fax: 617-256264
Email: SAUL@MEDIA.MIT.EDU
Participation: Poster Presenter

FRANZISKA GROEHN
NIST
POLYMERS DIVISION
100 BUREAU DRIVE, STOP 8542
GAITHERSBURG, MD 20899-8542

Phone: 301-975-3586
Fax:
Email:
Participation: Attendee

DANIEL E GRUPP
STANFORD UNIVERSITY
CISX BUILDING
STANFORD, CA 94305

Phone: 650-724-6911
Fax: 520-962-4754
Email: grupp@stanford.edu
Participation: Poster Presenter

MICHAEL A GUILLORN
UNIVERSITY OF TENNESSEE, KNOXVILLE/ORNL
OAK RIDGE NATIONAL LABORATORY
PO BOX 2008
MS 6006
OAK RIDGE, TN 37831-6006

Phone: 865-574-8588
Fax: 865-576-2813
Email: GUILLORN@ICSUN1.IC.ORNL.GOV
Participation: Poster Presenter

LEONID GUREVICH
DELFT UNIVERSITY OF TECHNOLOGY
PO BOX 5046
DELFT, 2600GA NETHERLANDS

Phone:
Fax:
Email: GUREVICH@QT.TN.TUDELFT.NL
Participation: Attendee

MARTIN GUTHOLD
UNIVERSITY OF NORTH CAROLINA
DEPTS. OF PHYSICS & COMPUTER SCIENCE
PHILLIPS 110, CB 3255
CHAPEL HILL, NC 27599

Phone: 919-962-3526
Fax: 919-962-0480
Email: GUTHOLD@CS.UNC.EUD
Participation: Poster Presenter

JONGYOON HAN
CORNELL UNIVERSITY
212 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-6286
Fax: 607-255-7658
Email: JH97@CORNELL.EDU
Participation: Poster Presenter

DAVID E HARWELL
UNIVERSITY OF HAWAII
HAWAIIAN ADVANCED NANOTECHNOLOGY ALLIANCE
DEPARTMENT OF CHEMISTRY
2545 THE MALL
HONOLULU, HI 96822

Phone: 808-956-5586
Fax: 808-956-5908
Email: HARWELL@HAWAII.EDU
Participation: Attendee

THORSTEN HESJEDAL
STANFORD UNIVERSITY
CIS-X 324
VIA ORTEGA
STANFORD, CA 94305-4075

Phone: 650-723-7537
Fax: 650-723-4659
Email: THORSTEN@SNOW.STANFORD.EDU
Participation: Attendee

SAW W HLA

PAUL DRUDE INSTITUT FOR SOLID STATE ELECTRONICS
FB PHYSIK
FREIE UNIVERSITAT BERLIN
ARNIMALLEE 14
BERLIN, D-14195 GERMANY

Phone: 49 30 838 52813
Fax: 49 30 831 1355
Email: hlas@physik.fu-berlin.de
Participation: Poster Presenter

FRANCES A HOULE

IBM ALMADEN RESEARCH CENTER
650 HARRY ROAD, M/S D1
SAN JOSE, CA 95120

Phone: 408-927-2420
Fax: 408-927-2510
Email: HOULE@ALMADEN.IBM.COM
Participation: Monitor

PAUL HYMAN

TUFTS UNIVERSITY
MOLECULAR BIOLOGY AND MICROBIOLOGY
136 HARRISON AVENUE
BOSTON, MA 02111

Phone: 617-636-6754
Fax: 617-636-0337
Email: PHYMAN01@EMERALD.TUFTS.EDU
Participation: Poster Presenter

JOSEPH M JACOBSON

MIT MEDIA LABORATORY
20 AMES STREET
E15-435
CAMBRIDGE, MA 02139

Phone: 617-253-0905
Fax: 617-258-6264
Email: JACOBSON@MEDIA.MIT.EDU
Participation: Attendee

CONRAD D JAMES

CORNELL UNIVERSITY
212 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-6286
Fax: 607-255-7658
Email: CDJ5@CORNELL.EDU
Participation: Poster Presenter

RALPH JOERGER

ANGSTROMLABORATORIET INSTITUTE
HUS 4 VAN2, RUM 4243
LAGERHYDDSVAGEN 1
BOX 534
UPPSALA, 751023 SWEDEN

Phone:
Fax:
Email:
Participation: Speaker

G.A.C. JONES

UNIVERSITY OF CAMBRIDGE
CAVENDISH LABORATORY
MADINGLY ROAD
CAMBRIDGE, CB1 0HE UNITED KINGDOM

Phone: 44-1223-337484
Fax: 44-1223-337271
Email: GAJ1@CAM.AC.UK
Participation: Poster Presenter

SEREF KALEM

TUBITAK-UEKAE
PO BOX 21
INSTITUTE OF ELECTRONICS
GEBZE, KOCAELI, 41470 TURKEY

Phone: 90-262-641-2300-3167
Fax: 90-262-641-2309
Email: KALEM@MAM.GOV.TR
Participation: Poster Presenter

DIETER P KERN

UNIVERSITAET TUEBINGEN
INSTITUT FUER ANGEWANDTE PHYSIK
AUF DER MORGEN STELLE 10
TUEBINGEN, D-72076 GERMANY

Phone: 49-7071-29-72999
Fax: 49-7071-29-5400
Email: DIETER.KERN@UNI-TUEBINGEN.DE
Participation: Vice Chair

GAVIN M KING

DARTMOUTH COLLEGE
DEPARTMENT OF PHYSICS AND ASTRONOMY
6127 WILDER LABORATORY
HANOVER, NH 03755

Phone: 603-646-2720
Fax: 603-646-1446
Email: GMK@DARTMOUTH.EDU
Participation: Poster Presenter

RAFAEL N KLEIMAN
BELL LABORATORIES
600 MOUNTAIN AVE.
RM 1D-258
MURRAY HILL, NJ 07974

Phone: 908-582-5485
Fax: 908-582-7660
Email: RAFI@LUCENT.COM
Participation: Speaker

REINHOLD KOCH
PAUL-DRUDE-INSTITUT FUER FESTKOERPERELEKTRONIK
HAUSVOGTEIPLATZ 5-7
BERLIN, D-10117 GERMANY

Phone: 49-30-203-77-X414
Fax: 49-30-203-77 X257
Email: KOCH@PDI-BERLIN.DE
Participation: Poster Presenter

JOHANNES KRETZ
INFINEON TECHNOLOGIES
OTTO HAHN RING 6
MUNICH, D-81730 GERMANY

Phone: 49-89-234-50083
Fax: 49-89-234-71599
Email: JOHANNES.KRETZ@INFINEON.COM
Participation: Attendee

ANANTHA KRISHNAN
DARPA/MTO
3701 NORTH FAIRFAX DRIVE
ARLINGTON, VA 22203

Phone: 703-696-4470
Fax: 703-696-2206
Email: AKRISHNAN@DARPA.MIL
Participation: Attendee

ALEXANDER LIDDLE
LUCENT TECHNOLOGIES
RM 1C-263
600 MOUNTAIN AVE.
MURRY HILL, NJ 07974

Phone: 908-582-5405
Fax: 908-582-6770
Email: JLIDDLE@LUCENT.COM
Participation: Speaker

MARYA LIEBERMAN
UNIVERSITY OF NOTRE DAME
251 NIEUWLAND SCIENCE HALL
DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY
NOTRE DAME, IN 46556

Phone: 219-631-4665
Fax: 219-631-6652
Email: MLIEBERM@ND.EDU
Participation: Poster Presenter

QINGHUANG LIN
IBM T.J. WATSON RESEARCH CENTER
P.O. BOX 218
ROUTE 134, MS 6-250
YORKTOWN HEIGHTS, NY 120598

Phone: 914-945-2366
Fax: 914-945-2141
Email: QHLIN@US.IBM.COM
Participation: Poster Presenter

GANG-YU LIU
WAYNE STATE UNIVERSITY
DEPARTMENT OF CHEMISTRY
5101 CASS AVENUE
DETROIT, MI 48202-3489

Phone: 313-577-8658
Fax: 313-577-8822 or 1377
Email: GYL@CHEM.WAYNE.EDU
Participation: Poster Presenter

DAVID M LONGO
UNIVERSITY OF VIRGINIA
DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING
116 ENGINEER'S WAY
P.O. BOX 400745
CHARLOTTESVILLE, VA 22904-4745

Phone: 804-982-5794
Fax: 804-982-5799
Email: LONGO@VIRGINIA.EDU
Participation: Attendee

GREGORY P LOPINSKI
NATIONAL RESEARCH COUNCIL CANADA
STEACIE INSTITUTE FOR MOLECULAR SCIENCES
100 SUSSEX DRIVE
OTTAWA, ON K1N 7Z4 CANADA

Phone: 613-990-4155
Fax: 613-954-8902
Email: GREGORY.LOPINSKI@NRC.CA
Participation: Poster Presenter

WHYE-KEI LYE

UNIVERSITY OF VIRGINIA
DEPARTMENT OF ELECTRICAL ENGINEERING
351 MCCORMICK ROAD
CHARLOTTESVILLE, VA 22903

Phone: 804-982-2374
Fax: 804-924-8818
Email: WKLYE@VIRGINIA.EDU

Participation: Poster Presenter

R. SCOTT MACKAY

INTERNATIONAL SEMATECH
2706 MONTOPOLIS DRIVE
AUSTIN, TX 78741

Phone: 512-356-3617
Fax: 512-356-3618
Email: SCOTT.MACKAY@SEMATECH.ORG

Participation: Attendee

ROBERT MAGERLE

UNIVERSITAET BAYREUTH
PHYSIKALISCHE CHEMIE II
BAYREUTH, 95440 GERMANY

Phone: 49-921-55-2641
Fax: 49-921-55-2059
Email: ROBERT.MAGERLE@UNI-BAYREUTH.DE
Participation: Poster Presenter

DAVID MARGOLESE

MATERIALS RESEARCH SOURCE
2265 EAST FOOTHILL BOULEVARD
PASADENA, CA 91107

Phone: 626-449-2408
Fax: 626-449-2176
Email: MRSLLC@EARTHLINK.NET

Participation: Attendee

CHRISTIE R MARRIAN

DARPA/ETO
3701 NORTH FAIRFAX DRIVE
ARLINGTON, VA 22203

Phone: 703-696-2213
Fax: 703-696-2206
Email: CMARRIAN@DARPA.MIL

Participation: Chair

HIROSHI MATSUI

UNIVERSITY OF CENTRAL FLORIDA
DEPARTMENT OF CHEMISTRY
4000 CENTRAL FLORIDA BOULEVARD
ORLANDO, FL 32816-2366

Phone: 407-823-1029
Fax: 407-823-2252
Email: HMATSUI@PEGASUS.CC.UCF.EDU

Participation: Poster Presenter

STEFAN MAUPAI

UNIVERSITY OF ERLANGEN
INSTITUTE FOR CORROSION AND SURFACE TECHNOLOGY
MARTENSSTR. 7
ERLANGEN, 91058 GERMANY

Phone: 49-9131-852759
Fax: 49-9131-852758
Email: MAUPAI@CMP02WWW4.WWV.UNI-ERLANGEN.DE
Participation: Poster Presenter

THERESA S MAYER

PENN STATE UNIVERSITY
DEPARTMENT OF ELECTRICAL ENGINEERING
111K ELECTRICAL ENGINEERING WEST
UNIVERSITY PARK, PA 16802

Phone: 814-863-8458
Fax: 814-865-7065
Email: TSM2@EMAIL.PSU.EDU

Participation: Speaker

TERRY A MICHALSKE

SANDIA NATIONAL LABORATORIES
SURFACE AND INTERFACE SCIENCES
PO BOX 5800, MAIL STOP 1413
ALBUQUERQUE, NM 87185-1413

Phone: 505-844-5829
Fax: 505-844-5470
Email: TAMICHA@SOMNET.SANDIA.GOV

Participation: Speaker

JOSEPH G MICHELS

PRINCETON UNIVERSITY
70 PROSPECT AVENUE
PRINCETON, NJ 08540

Phone: 609-258-1717
Fax: 609-258-1177
Email: JMICHELS@PRINCETON.EDU

Participation: Attendee

VLADIMIR MORDKOVICH
ICMR
EAST 601 KSP
SAKADO 3-2-1
TAKATSU-KU
KWASAKI, 213-0012 JAPAN

Phone: 81-44-813-7830
Fax: 81-44-813-7233
Email: VLADIMIR@ICMR.CO.JP
Participation: Poster Presenter

DAVID J NICHOLLS
US AIR FORCE
SAF/AQL
1060 AIR FORCE PENTAGON
WASHINGTON, DC 20301

Phone: 703-607-3862
Fax: 703-698-9570
Email: NICHOLLS1@EARTHLINK.NET
Participation: Attendee

GEOFF NUNES
DARTMOUTH COLLEGE
DEPT OF PHYSICS & ASTRONOMY
6127 WILDER LAB
HANOVER, NH 03755

Phone: 603-646-2962
Fax: 603-646-1446
Email: GNUNES@DARTMOUTH.EDU
Participation: Poster Presenter

ANATOLI OLKHOVETS
CORNELL UNIVERSITY
G-7 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-6286
Fax: 607-255-7658
Email: AGO2@CORNELL.EDU
Participation: Attendee

R. FABIAN PEASE
STANFORD UNIVERSITY
DEPARTMENT OF ELECTRICAL ENGINEERING
CISX 314
STANFORD, CA 94305-4055

Phone: 650-723-0959
Fax: 650-723-4659
Email: PEASE@CIS.STANFORD.EDU
Participation: Discussion Leader

DAVID J PENA
PENN STATE UNIVERSITY
152 DAVEY LAB
BOX 61
UNIVERSITY PARK, PA 16802

Phone: 814-863-8038
Fax: 814-865-1924
Email: DJP13@PSU.EDU
Participation: Poster Presenter

F. KEITH PERKINS
NAVAL RESEARCH LABORATORY
CODE 6863
4555 OVERLOOK AVENUE
WASHINGTON, DC 20375

Phone: 202-767-3971
Fax: 202-767-4290
Email: PERKINS@ESTD.NRL.NAVY.MIL
Participation: Poster Presenter

TOM PETERSEN
LUCENT TECHNOLOGIES- BELL LABS
1 NOB HILL COURT
SETAUKET, NY 11733

Phone: 908-582-2413
Fax:
Email: PETERSEN@PRINCETON.EDU
Participation: Attendee

BRUNO PIGNATARO
UNIVERSITA DEGLI STUDI D
DIPARTIMENTO DI SCIENZE CHIMICHE
CATANIA, V. LE A. DORIA 6
CATANIA, 95125 ITALY

Phone: 390957139148
Fax:
Email: BPIGNATARO@DIPCHI.UNICT.IT
Participation: Poster Presenter

MARK A REED
YALE UNIVERSITY
CNTR MICROMOLECULAR MATERIAL & STRUCTURE
P.O. BOX 208284
NEW HAVEN, CT 06520-8284

Phone: 203-432-4300
Fax: 203-432-6420
Email: MARK.REED@YALE.EDU
Participation: Speaker

BRIAN D REISS

PENNSYLVANIA STATE UNIVERSITY
152 DAVEY LABORATORY
MAILBOX #67
UNIVERSITY PARK, PA 16802

Phone: 814-863-9556
Fax: 814-865-3314
Email: BDR2@PSU.EDU

Participation: Poster Presenter

RON RENDELL

NAVAL RESEARCH LABORATORY
CODE 6813
WASHINGTON, DC 20375

Phone: 202-404-8478
Fax: 202-404-7194
Email: RENDELL@ESTD.NRL.NAVY.MIL

Participation: Poster Presenter

BRENT RIDLEY

MIT MEDIA LAB
20 AMES STREET
ROOM 429
CAMBRIDGE, MA 02139

Phone: 617-253-5554
Fax: 617-258-6264
Email: RIDLEY@MEDIA.MIT.EDU

Participation: Poster Presenter

CAROLINE ROSS

MIT
DEPT OF MATERIALS SCIENCE & ENGINEERING
ROOM 13-4004, 77 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139

Phone: 617-258-0223
Fax:
Email: CAROSS@MIT.EDU

Participation: Speaker

MICHAEL L ROUKES

CALTECH
CONDENSED MATTER PHYSICS
MS 114-36
PASADENA, CA 91125

Phone: 626-395-2916
Fax: 626-683-9060
Email: ROUKES@CALTECH.EDU

Participation: Speaker

KRESIMIR RUPNIK

LOUISIANA STATE UNIVERSITY
DEPARTMENT OF CHEMISTRY
BATON ROUGE, LA 70803

Phone: 225-916-1353
Fax: 225-399-3458
Email: CHRUPN@LSU.EDU

Participation: Poster Presenter

ZIVILE R RUTKUNIENE

KAUNAS UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF PHYSICS
STUDENTU ST. 50
KAUNAS, LT-3031 LITHUANIA

Phone: 370-7-300-341
Fax: 370-7-350-737
Email: ZIRUT@FMF.KTU.LT

Participation: Poster Presenter

LIDIJA SEKARIC

CORNELL UNIVERSITY
DEPARTMENT OF APPLIED PHYSICS
212 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-6286
Fax: 607-255-7658
Email: LS63@CORNELL.EDU

Participation: Speaker

JAMES R SHEATS

ROLLTRONIC CORP.
1010 EL CAMINO REAL
SUITE 300
MENLO PARK, CA 94025

Phone: 650-566-8471
Fax: 408-734-9620
Email: SHEATS@ROLLTRONICS.COM

Participation: Attendee

WALTER SMITH

HAVERFORD COLLEGE
370 LANCASTER AVENUE
STOKES HALL, ROOM 116A
HAVERFORD, PA 19041-1392

Phone: 610-896-1332
Fax: 610-896-4904
Email: WSMITH@HAVERFORD.EDU

Participation: Poster Presenter

ERIC SNOW

NAVAL RESEARCH LABORATORY
CODE 6876
WASHINGTON, DC 20375

Phone: 202-767-3261
Fax: 202-767-1165
Email: SNOW@BLOCH.NRL.NAVY.MIL

Participation: Poster Presenter

CLIVIA SOTOMAYOR TORRES

UNIVERSITY OF WUPPERTAL
INSTITUTE OF MATERIALS SCIENCE
GAUSS-STR. 20
WUPPERTAL, 42097 GERMANY

Phone: 49-202-439-2920
Fax: 49-202-439-3037
Email: CLIVIA@UNI-WUPPERTAL.DE

Participation: Speaker

ANDREW SPARKS

MIT MEDIA LABORATORY
20 AMES STREET, E15-320F
CURRICULUM IN GENETICS
CAMBRIDGE, MA 02139-4307

Phone: 617-253-8317
Fax: 208-361-5860
Email: AWSPARKS@MEDIA.MIT.EDU

Participation: Poster Presenter

S.V. SREENIVASAN

UNIVERSITY OF TEXAS AT AUSTIN
DEPARTMENT OF MECHANICAL ENGINEERING
AUSTIN, TX 78712

Phone: 512-471-6546
Fax: 512-471-8727
Email: SV.SREENI@MAIL.UTEXAS.EDU

Participation: Attendee

HORST L STORMER

COLUMBIA UNIVERSITY
DEPARTMENT OF PHYSICS AND APPLIED PHYSICS
704 PUPIN HALL MAIL CODE 5255
WEST 120TH STREET
NEW YORK, NY 10027

Phone: 212-854-3279
Fax: 212-854-3279
Email: HORST@PHYSICS.BELL-LABS.COM

Participation: Speaker

ANDREW C TAM

IBM CORPORATION
ALMADEN RESEARCH CENTER
650 HARRY ROAD
SAN JOSE, CA 95120-6099

Phone: 408-927-1943
Fax: 408-927-2100
Email: ACTAM@ALMADEN.IBM.COM

Participation: Poster Presenter

DAVID M TANENBAUM

POMONA COLLEGE
DEPARTMENT OF PHYSICS & ASTRONOMY
610 NORTH COLLEGE AVENUE
CLAREMONT, CA 91711

Phone: 909-621-8722
Fax: 909-621-8463
Email: DTANENBAUM@POMONA.EDU

Participation: Attendee

DONALD M TENNANT

BELL LABORATORIES
ROOM 4D 325
101 CRAWFORD CORNERS ROAD
HOLMDEL, NJ 07733

Phone: 732-949-5007
Fax: 732-949-8988
Email: DMT@BELL-LABS.COM

Participation: Speaker

BRUCE D TERRIS

IBM
DEPT K11/02
650 HARRY ROAD
SAN JOSE, CA 95120

Phone: 408-927-1517
Fax: 408-927-2100
Email: TERRIS@ALMADEN.IOM.COM

Participation: Speaker

MARK A TOPINKA

HARVARD UNIVERSITY
36 OXFORD STREET
CAMBRIDGE, MA 02138

Phone: 617 495-9598
Fax: 617 495-9230
Email: mtopinka@fas.harvard.edu

Participation: Speaker

MASSIMO TORMEN
UNIVERSITY OF WUERZBURG
PHYSICAL INSTITUTE
AM HUBLAND
WUERZBURG, 97074 GERMANY

Phone: 49-931-8885876
Fax: 49-931-8885142
Email: TORMEN@PHYSIK.UNI-
WUERZBURG.DE
Participation: Poster Presenter

J S TSAI
NEC FUNDAMENTAL RESEARCH LABS.
34 MIYUKIGAOKA
TSUKUBA, 305 JAPAN

Phone: 81-298-50-1161
Fax: 81-298-56-6139
Email: TSAI@QWAVE.CL.NEC.CO.JP
Participation: Speaker

ANDREA TURNER
CORNELL UNIVERSITY
G6 CLARK HALL
ITHACA, NY 14853

Phone: 607-255-6286
Fax: 607-255-7658
Email: AMP24@CORNELL.EDU
Participation: Poster Presenter

STEPHEN W TURNER
CORNELL UNIVERSITY
ROOM G6 CLARK HALL
ITHACA, NY 14850

Phone: 607-255-6286
Fax: 607-255-7658
Email: ST37@CORNELL.EDU
Participation: Poster Presenter

JOHN A VENABLES
ARIZONA STATE UNIVERSITY
DEPARTMENT OF PHYSICS & ASTRONOMY
TEMPE, AZ 85287-1504

Phone: 602-965-1675
Fax:
Email: JOHN.VENABLES@ASU.EDU
Participation: Poster Presenter

PETER VETTIGER
IBM CORPORATION
RESEARCH DIVISION
SAUMERSTRASSE 4
RUSCHLIKON, CH-9903 SWITZERLAND

Phone:
Fax:
Email: PV@ZURICH.IBM.COM
Participation: Speaker

MARLON L WALKER
OFFICE OF NAVAL RESEARCH
BALLSTON CENTRETOWER ONE
800 NORTH QUINCY STREET
ARLINGTON, VT 22217-5660

Phone: 703-696-1938
Fax: 703-696-6887
Email: WALKERM@ONR.NAVY.MIL
Participation: Attendee

FREDERICK T WALLENBERGER
PPG INDUSTRIES
FIBERGLASS RESEARCH, GLASS TECH CENTER
P.O. BOX 2844
PITTSBURGH, PA 15230-2844

Phone: 412-820-4948
Fax: 412-820-4952
Email: WALLENBERGER@PPG.COM
Participation: Attendee

BOB WESTERVELT
HARVARD UNIVERSITY
9 OXFORD STREET
CAMBRIDGE, MA 02138

Phone: 617 495 3296
Fax: 617 495 9837
Email: westervelt@deas.harvard.edu
Participation: Attendee

ERIC J WILHELM
MIT MEDIA GROUP
20 AMES STREET
BUILDING E15-015
CAMBRIDGE, MA 02139

Phone: 617 253 0988
Fax:
Email:
Participation: Attendee

JOHN G WILLIAMS
LI-COR, INC.
4308 PROGRESSIVE AVENUE
LINCOLN, NE 68504

Phone: 402-467-0714
Fax: 402-467-0819
Email: JWILLIAMS@BIO.LICOR.COM

Participation: Attendee

GRANT WILLSON
UNIVERSITY OF TEXAS
DEPARTMENT OF CHEMICAL ENGINEERING
AUSTIN, TX 78712

Phone: 512-471-7222
Fax: 512-471-4342
Email: WILLSON@CHE.UTEXAS.EDU

Participation: Speaker

GUOHUA YANG
WAYNE STATE UNIVERSITY
75 DEPARTMENT OF CHEMISTRY
5101 CASS AVE.
DETROIT, MI 48202

Phone: 313-577-0482
Fax: 313-577-8822
Email: GYANG@SUN.SCIENCE.WAYNE.EDU

Participation: Poster Presenter

MAXIM ZALALUTDINOV
CORNELL UNIVERSITY
CLARK HALL, D-3
PHYSICS DEPARTMENT
ITHACA, NY 14853

Phone: 607-255-6286
Fax: 607-255-7658
Email: MAXIM@CCMR.CORNELL.EDU

Participation: Attendee

MIN ZHENG
CMRA, UNIVERSITY OF NEBRASKA
304 BRACE LAB
LINCOLN, NE 68588

Phone: 402-472-5385
Fax: 402-472-2879
Email: MZHENG@UNLSERVE.UNL.EDU

Participation: Poster Presenter